

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|-------|------|---|-------|------------------|---------|------------------|
| L1 | 0 | (myf-3 or myf3) near4 (cdk4 or (cyclin adj dependent adj kinase adj "4")) | USPAT | OR | OFF | 2005/09/24 17:29 |

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FULL ESTIMATED COST

| SINCE FILE ENTRY | TOTAL SESSION |
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| 0.21 | 0.21 |

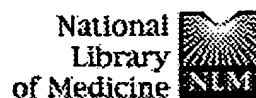
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=> s (myf-3 or myf3) (8A) (cdk4 or (cyclin dependent kinase 4))
L1 0 (MYF-3 OR MYF3) (8A) (CDK4 OR (CYCLIN DEPENDENT KINASE
4))



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All: 4 Review: 0

Text Version

Items 1 - 4 of 4

One page.

Entrez PubMed

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E-Utilities

☐ 1: Simone C, Stiegler P, Bagella L, Pucci B, Bellan C, De Falco G, De Luca A, Guanti G, Puri PL, Giordano A. Related Articles, Links

☐ Activation of MyoD-dependent transcription by cdk9/cyclin T2. Oncogene. 2002 Jun 13;21(26):4137-48. PMID: 12037670 [PubMed - indexed for MEDLINE]

☐ 2: Zhang JM, Zhao X, Wei Q, Paterson BM. Related Articles, Links

☐ Direct inhibition of G(1) cdk kinase activity by MyoD promotes myoblast cell cycle withdrawal and terminal differentiation. EMBO J. 1999 Dec 15;18(24):6983-93. PMID: 10601020 [PubMed - indexed for MEDLINE]

☐ 3: Zhang JM, Wei Q, Zhao X, Paterson BM. Related Articles, Links

☐ Coupling of the cell cycle and myogenesis through the cyclin D1-dependent interaction of MyoD with cdk4. EMBO J. 1999 Feb 15;18(4):926-33. PMID: 10022835 [PubMed - indexed for MEDLINE]

☐ 4: Flink IL, Oana S, Maitra N, Bahl JJ, Morkin E. Related Articles, Links

☐ Changes in E2F complexes containing retinoblastoma protein family members and increased cyclin-dependent kinase inhibitor activities during terminal differentiation of cardiomyocytes. J Mol Cell Cardiol. 1998 Mar;30(3):563-78. PMID: 9515032 [PubMed - indexed for MEDLINE]

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=> s myoD (3A) (human or sapien)

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=> s myoD (3A) (human or sapien)

L1 130 MYOD (3A) (HUMAN OR SAPIEN)

=> s (cdk4 or (cyclin dependent kinase 4)) (4A) (bind or binding or bound)

L2 856 (CDK4 OR (CYCLIN DEPENDENT KINASE 4)) (4A) (BIND OR BINDING OR BOUND)

=> s l1 (10A) l2

L3 0 L1 (10A) L2

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|-------|------|--|-------|------------------|---------|------------------|
| L1 | 0 | myod near4 cdk4 | USPAT | OR | OFF | 2005/09/24 15:54 |
| L2 | 0 | myod near4 (cdk4 or (cyclin adj dependent adj kinase adj "4")) | USPAT | OR | OFF | 2005/09/24 15:54 |

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=> s myod (4A) (cdk4 or (cyclin dependent kinase 4))
L1 10 MYOD (4A) (CDK4 OR (CYCLIN DEPENDENT KINASE 4))

=> s l1 (10A) (bind or binding or bound)
L2 8 L1 (10A) (BIND OR BINDING OR BOUND)

=> duplicate
ENTER REMOVE, IDENTIFY, ONLY, OR (?):remove
ENTER L# LIST OR (END):l2
DUPLICATE PREFERENCE IS 'MEDLINE, EMBASE, BIOSIS, CAPLUS'
KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n
PROCESSING COMPLETED FOR L2
L3 2 DUPLICATE REMOVE L2 (6 DUPLICATES REMOVED)

=> d l3 1-2 bib ab

L3 ANSWER 1 OF 2 MEDLINE on STN DUPLICATE 1
AN 2000069328 MEDLINE
DN PubMed ID: 10601020
TI Direct inhibition of G(1) cdk kinase activity by MyoD promotes
myoblast
cell cycle withdrawal and terminal differentiation.
AU Zhang J M; Zhao X; Wei Q; Paterson B M
CS Laboratory of Biochemistry, NCI, National Institutes of Health,
Building
37 Room 4A21, 9000 Rockville Pike, Bethesda, MD 20892, USA.
SO EMBO journal, (1999 Dec 15) 18 (24) 6983-93.
Journal code: 8208664. ISSN: 0261-4189.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English

FS Priority Journals
 EM 200001
 ED Entered STN: 20000204
 Last Updated on STN: 20000204
 Entered Medline: 20000127
 AB MyoD has been proposed to facilitate terminal myoblast differentiation by binding to and inhibiting phosphorylation of the retinoblastoma protein (pRb). Here we show that MyoD can interact with cyclin-dependent kinase 4 (cdk4) through a conserved 15 amino acid (aa) domain in the C-terminus of MyoD. MyoD, its C-terminus lacking the basic helix-loop-helix (bHLH) domain, or the 15 aa cdk4-binding domain all inhibit the cdk4-dependent phosphorylation of pRb in vitro. Cellular expression of full-length MyoD or fusion proteins containing either the C-terminus or just the 15 aa **cdk4-binding** domain of **MyoD** inhibit cell growth and pRb phosphorylation in vivo. The minimal **cdk4-binding** domain of **MyoD** fused to GFP can also induce differentiation of C2C12 muscle cells in growth medium. The defective myogenic phenotype in MyoD-negative BC3H1 cells can be rescued completely only when **MyoD** contains the **cdk4-binding** domain. We propose that a regulatory checkpoint in the terminal cell cycle arrest of the myoblast during differentiation involves the modulation of the cyclin D cdk-dependent phosphorylation of pRb through the opposing effects of cyclin D1 and MyoD.

L3 ANSWER 2 OF 2 MEDLINE on STN DUPLICATE 2
 AN 1999146910 MEDLINE
 DN PubMed ID: 10022835
 TI Coupling of the cell cycle and myogenesis through the cyclin D1-dependent interaction of MyoD with cdk4.
 AU Zhang J M; Wei Q; Zhao X; Paterson B M
 CS Laboratory of Biochemistry, NCI, National Institutes of Health, Building 37 Room 4A21, 9000 Rockville Pike, Bethesda, MD 20892, USA.
 SO EMBO journal, (1999 Feb 15) 18 (4) 926-33.
 Journal code: 8208664. ISSN: 0261-4189.
 CY ENGLAND: United Kingdom
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals

EM 199904

ED Entered STN: 19990511

Last Updated on STN: 20020212

Entered Medline: 19990426

AB Proliferating myoblasts express the muscle determination factor, MyoD,

throughout the cell cycle in the absence of differentiation.

Here we show

that a mitogen-sensitive mechanism, involving the direct interaction

between MyoD and cdk4, restricts myoblast differentiation to cells that

have entered into the G0 phase of the cell cycle under mitogen withdrawal.

Interaction between **MyoD** and **cdk4** disrupts

MyoD DNA-binding, muscle-specific gene activation and myogenic conversion of 10T1/2 cells independently of cyclin D1 and the CAK

activation of cdk4. Forced induction of cyclin D1 in myotubes results in

the cytoplasmic to nuclear translocation of cdk4. The specific MyoD-cdk4

interaction in dividing myoblasts, coupled with the cyclin D1-dependent

nuclear targeting of cdk4, suggests a mitogen-sensitive mechanism whereby

cyclin D1 can regulate MyoD function and the onset of myogenesis by

controlling the cellular location of cdk4 rather than the phosphorylation

status of MyoD.

| Ref # | Hits | Search Query | DBs | Default Operator | Plurals | Time Stamp |
|-------|------|--|-------|------------------|---------|------------------|
| L1 | 4 | myoD near3 (human or sapien) | USPAT | OR | OFF | 2005/09/24 01:19 |
| L2 | 81 | (cdk4 or (cyclin adj dependent adj kinase adj "4")) near4 (bind or binding or bound) | USPAT | OR | OFF | 2005/09/24 01:19 |
| L3 | 0 | L1 near10 L2 | USPAT | OR | OFF | 2005/09/24 01:20 |